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U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

Collaborating with
MONTANA AGRICULTURAL EXPERIMENT STATION

AS OF
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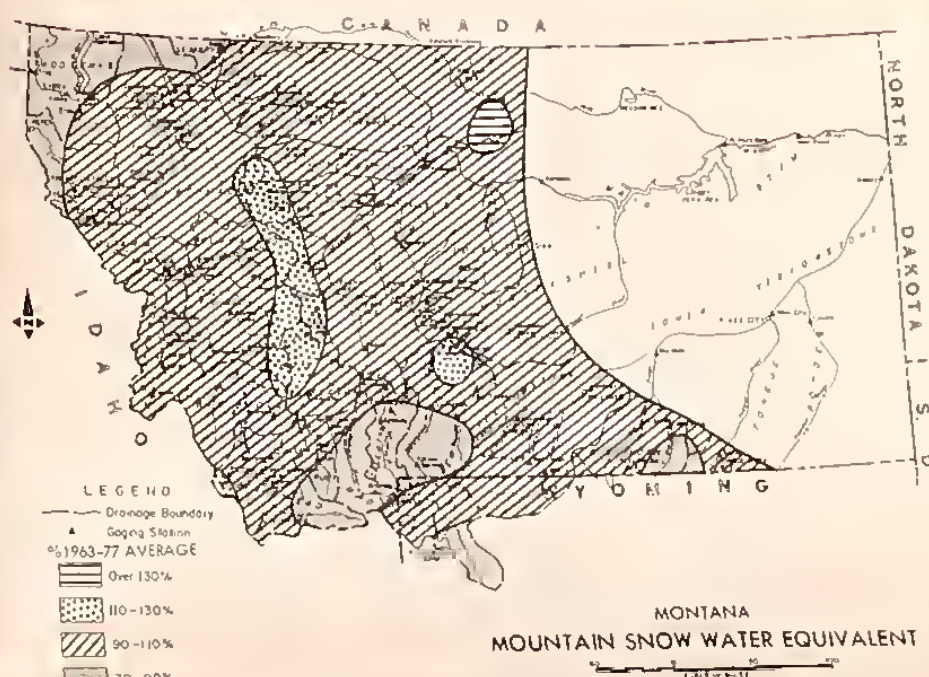
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MOUNTAIN SNOWPACK

Most high elevation areas have snowpack near or slightly below average. Many low elevation areas have above average amounts of water stored in the snow as a result of heavier than normal winter snowfall, lack of winter melt and below normal melt during April.

The northwest and portions of the southwest continue to show below aver-

age snowpack. The Bighorn Mountains, extending from Wyoming into Montana, also show below average snow. There is above average snow cover in the Crazy Mountains and along the Continental Divide from Butte north to the Teton River headwaters. A very heavy snowpack is still present in the Bear Paw Mountains.

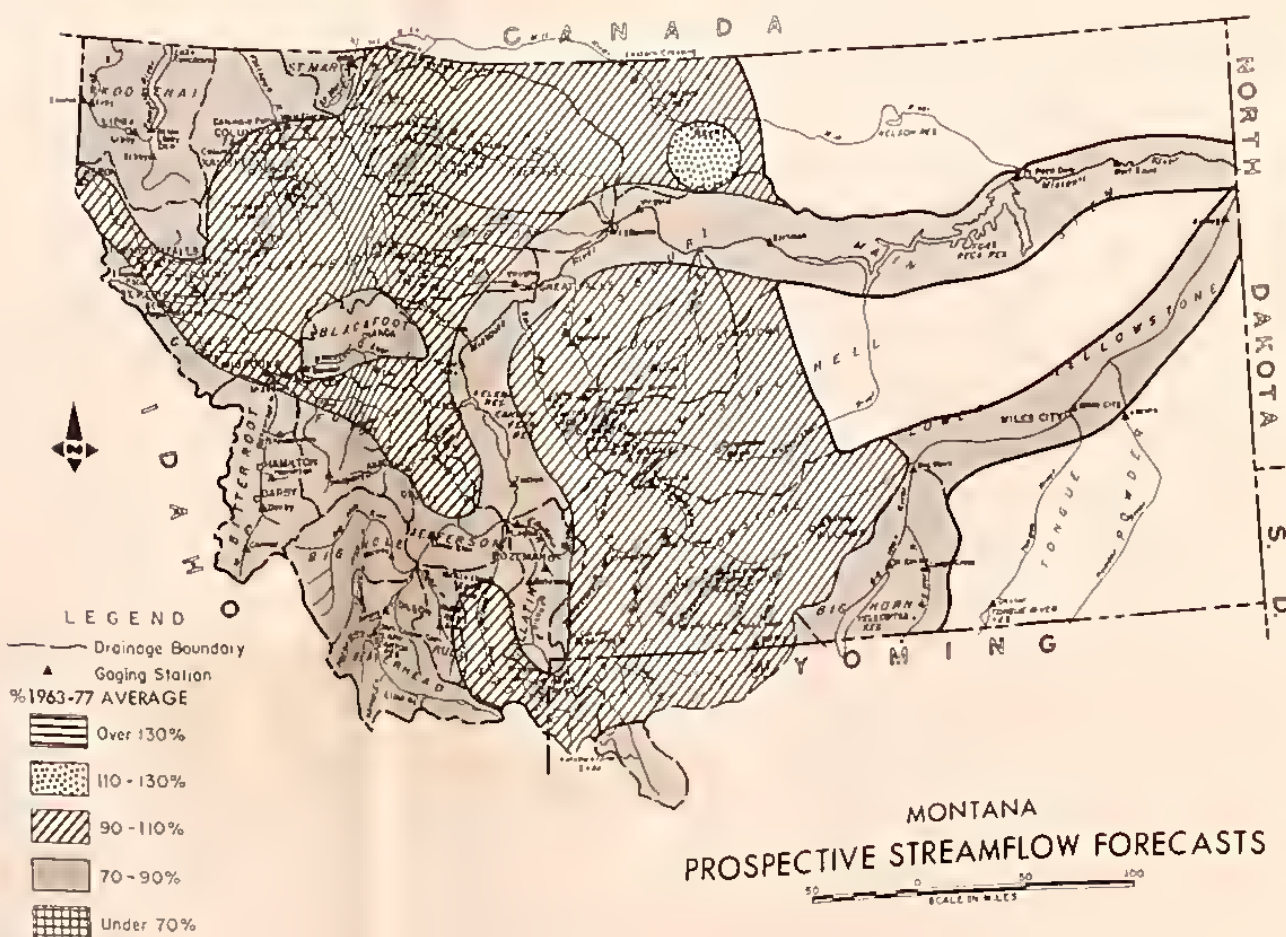
STREAMFLOW FORECASTS

April runoff was below average on most snowed drainages as cool temperatures retarded snow melt. The total May through September runoff is forecast to be below average for most streams in the southwest and northwest portions of the state. There is considerable low elevation snow remaining that will fill most stream channels near bank-full when it melts. Any additional runoff from rainfall will add to this snow melt runoff.

Most of the Yellowstone River drainage, Upper Clark Fork River west of the divide, the Madison, Sun, Marias, Teton Rivers and smaller streams in Central Montana should have a May through September runoff from near average to about 10 percent below average. The Bitterroot and Blackfoot Rivers are forecast to have 10 to 15 percent below average runoff while the North Fork of the Flathead and the Kootenai River are expected to produce 25 to 30 percent less than their normal runoff.

The Missouri River headwater streams are forecast to have only 70 to 85 percent of their average streamflow during the spring and summer period. This below average flow will carry downstream in the Missouri River. Runoff for the Boulder River is forecast to be a little above average while the Madison should produce a little less than average runoff. Runoff from the Bear Paw Mountains should be above average during the snow melt period. The Bighorn River and St. Mary's River drainages are forecast to have below average runoff. The total flow of the Yellowstone River below the Bighorn will be about 10 to 12 percent below average.

Irrigation water supplies on most streams not having reservoir storage will be adequate in early season, dipping to below average in mid-to-late season unless the spring and summer temperatures continue to be cooler than normal.



MONTANA PROSPECTIVE STREAMFLOW FORECASTS

Columbia River Drainage

BASIN, STREAM and FORECAST POINT	THIS YEAR		PAST RECORD		THIS YEAR		PAST RECORD		THIS YEAR		PAST RECORD	
	FORECAST		THOUSAND ACRE FEET		FORECAST		THOUSAND ACRE FEET		FORECAST		THOUSAND ACRE FEET	
	THOUSAND ACRE FEET	PERCENT OF AVERAGE	THOUSAND ACRE FEET	AVERAGE	THOUSAND ACRE FEET	PERCENT OF AVERAGE	THOUSAND ACRE FEET	AVERAGE	THOUSAND ACRE FEET	PERCENT OF AVERAGE	THOUSAND ACRE FEET	AVERAGE
Based on 1963-1977 Average Period	PERIOD	May - September	May - July	May - June	May - June	May - June	May - June	May - June	May - June	May - June	May - June	May - June
KOOTENAI RIVER below Libby Dam (1)	5,300	78	6,406	6,814	4,500	78	5,273	5,746				
FISHER RIVER near Libby	177	89		199	165	90		183				
YAAK RIVER near Troy	327	75		434	310	75		411				
KOOTENAI RIVER at Leona (1)	6,350	78	7,613	8,116	5,435	78	6,383	6,966	4,200	78	4,794	5,402
INFLOW MOUTON RESERVOIR nr BUTTE (Million Gallons)				215	236	87		248	197	89	194	222
WARM SPRINGS CREEK at MEYERS DAM near Anaconda (2)	38.7	80	30.7	48.1	31.0	80	20.7	38.6				
FLINT CREEK near Southern Cross (3)	14.1	86	16.4	16.4	11.5	86	13.0	13.4				
FLINT CREEK below Boulder Creek (4)	56.5	81		70.1	43.5	81		53.5				
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)	12.9	90	10.6	14.3	12.2	90	9.7	13.5				
MIDDLE FORK ROCK CREEK near Philipsburg	67.0	89		74.9	60.5	90		67.1				
NEVADA CREEK near Finn	18.5	96		19.3	17.0	97		17.5				
BLACKFOOT CREEK near Bonner	790	88		899	690	87		802	600	89		676
CLARK FORK RIVER above Milltown (6)	770	105		734	660	106		621	550	109		505
CLARK FORK RIVER above Missoula	1,560	96	1,619	1,633	1,360	96	1,375	1,423	1,150	97	1,065	1,180
WEST FORK BITTERROOT RIVER near Conner (7)	145	85		170	133	86		155				
BITTERROOT RIVER near Darby	465	85	603	549	430	86	548	499	370	87	447	427
SKALAKO CREEK near Hamilton	48.4	89		54.5	42.2	90		47.0				
BURNT FORK CREEK near Stevensville	32.3	88		36.8	28.1	89		31.7				
BITTERROOT RIVER at Missoula (9)	1,230	87		1,409	1,130	88		1,282	970	90		1,075
CLARK FORK RIVER below Missoula	2,790	92		3,042	2,490	92		2,705	2,120	94		2,255
CLARK FORK RIVER at St. Regis (MNS)	3,610	90	3,938	4,001	3,200	90	3,467	3,557	2,670	90	2,716	2,971
NORTH FORK FLATHEAD RIVER near Columbia Falls	1,370	76		1,809	1,220	75		1,622	1,020	76		1,338
MIDDLE FORK FLATHEAD RIVER near West Glacier	1,700	97	1,714	1,756	1,560	98	1,490	1,595	1,300	99	1,181	1,315
SOUTH FORK FLATHEAD RIVER near Columbia Falls	2,050	99	2,005	2,076	1,930	100	1,845	1,934	1,660	100	1,511	1,659
FLATHEAD RIVER at Columbia Falls (10)	5,150	89	5,462	5,773	4,750	90	4,829	5,270	4,000	91	3,884	4,405
SWAN RIVER near Big Fork	600	101		595	520	102		510				
FLATHEAD RIVER near Polson (11)	6,000	90	6,521	6,692	5,550	91	5,697	6,105	4,550	90	4,514	5,079
CLARK FORK RIVER near Plains (11) (MNS)	9,500	90	11,012	10,570	9,000	90	9,645	9,953	7,400	90	7,564	8,238
THOMPSON RIVER near Thompson Falls	195	89		219	170	89		191				
PROSPECT CREEK at Thompson Falls	99.0	85		116	92.0	85		106				
CLARK FORK RIVER at Whitehorse Rapids	11,100	91		12,207	9,960	91		10,945	8,240	91		9,059

- (1) Adjusted for storage in Lake Koocanusa.
- (2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
- (3) Adjusted for storage in Georgetown Lake, diversions from and pumping.
- (4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.
- (5) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.
- (6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.
- (7) Adjusted for storage in Painted Rocks Reservoir.
- (8) Adjusted for diversion into Sunset Highline Canal.
- (9) Difference in observed flow Clark Fork above and below Missoula.
- (10) Adjusted for storage in Hungry Horse Reservoir.
- (11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
- (12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.
- (13) National Weather Service forecast.

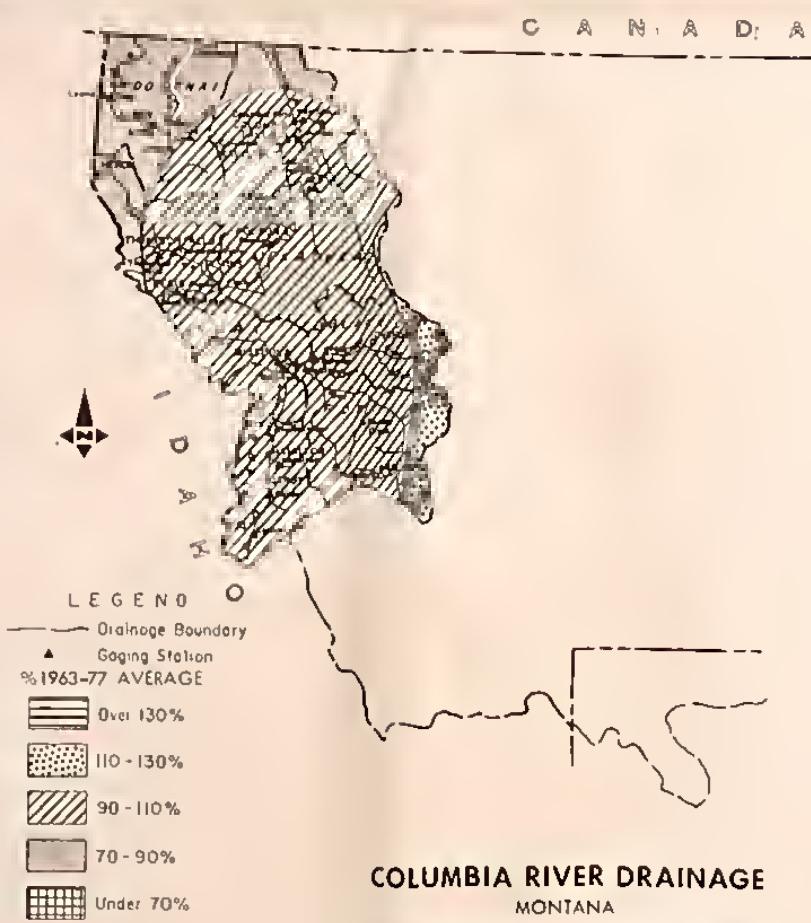
SUMMARY of SNOW MEASUREMENTS

RIVER BASIN	Number of Gauging Stations	THIS YEAR'S SNOW WATER EQUIVALENT	PERCENT OF AVERAGE
Kootenai/BC.....	23	92	76
Kootenai/Montana.....	20	98	81
Kootenai.....	43	96	79
Little Bitterroot.....	5	172	124
Flathead.....	34	100	93
Clark Fork above Blackfoot.....	30	149	111
Blackfoot.....	17	122	108
Clark Fork above Missoula.....	47	138	110
Bitterroot.....	15	104	98
Lower Clark Fork below Missoula.....	14	110	91
Clark Fork (Total w/o Flathead).....	76	120	101
Pend O'Reille (Clark Fork & Flathead).....	110	113	98
Columbia (Pend O'Reille & Kootenai).....	138	109	92

MOUNTAIN SNOWPACK

Many high elevation snow courses show increased amounts of water stored in the snowpack. Most low elevations had less melt than is common for April. The exception is in the northwest corner of the basin where melt occurred even at high elevations. In general, the snowpack is a little below-to-near average throughout most of the drainage. Much of the area along the Continental Divide from Butte, north to the Teton River headwaters shows above normal snowpack.

Because of heavier than normal low-elevation snows this winter and little melting during April, many low elevations show well above average snow for this time of year. This situation could create some runoff problems if prolonged warm weather and/or rains occur as lower elevation snow is melting.

COLUMBIA RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

WATER SUPPLY OUTLOOK

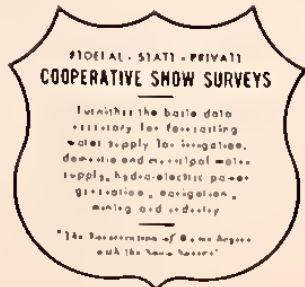
STREAM or AREA	Setting	Flow
Tobacco	Fair	Poor
Little Bitterroot	Ex	Avg
Missoula Valley	Avg	Avg
Flint Creek	Avg	Fair
Upper Clark Fork	Avg	Fair
Nevada Creek	Avg	Avg
Blackfoot	Avg	Avg
West-Side Bitterroot	Avg	Fair
East-Side Bitterroot	Avg	Fair
Bitterroot River	Avg	Fair
Lower Clark Fork	Avg	Fair

STREAMFLOW FORECASTS

Most streams are expected to have below average runoff during the May through September period, except the Upper Clark Fork River and Flathead River tributaries south and east of Katsispell.

Runoff during April was generally below average as result of cool temperatures causing snow melt in lower elevations to be less than normal.

There is considerable low elevation snow which will fill most river channels to near bank-full during the main snow melt and runoff period. Runoff during the irrigation season is expected to be slightly below normal in those drainages with below average high elevation snowpack.



SNOW SURVEY DATA

SNOW

DRAINAGE BASIN and SNOW COURSE		THIS YEAR		PAST RECORD	
NAME	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)
				Last Year	Average
ABUNDANCE LAKE	8800	4/27	76	25.2	25.0
AMBROSE	6480	4/27	41	17.0	9.5
ARCH FALLS	7350	4/27	43	14.2	13.2
BAGGER PASS	6900	5/03	99	43.9	39.1
HALO EAGLE PEAK	5700	4/25	133	55.7	54.1
BALO MOUNTAIN (WY)	9600	4/28	65	22.3	34.3
BALO RIDGE	7500	4/27	47	17.5	12.8
BANFIELD MOUNTAIN	5600	4/26	49	20.0	18.6
BANFIELD MOUNTAIN PILLOW	5600	4/26	SP	18.1	13.5
BARRE CREEK	5500	4/30	87	42.0	37.8
BARRE MIDWAY	4600	4/30	72	32.0	20.8
BARRE TRAIL	3800	4/30	0	0.0	0.0
BASIN CREEK	7180	4/27	42	12.2	5.9
BASSOON PEAK	5150	5/02	12	4.5	2.9
BATTLE RIDGE	6020	4/26	16	6.0	0.0
BEAGLE SPRINGS	8850	4/26	37	10.3	10.2
BEAGLE SPRINGS PILLOW	8850	4/26	SP	10.2	0.0
BEAR BASIN	8150	4/25	64	22.0	26.9
BEAR MOUNTAIN (ID)	5400	4/24	112	45.9	49.3
BEAR PAW SKI AREA	5200	4/27	37	15.0	8.8
BEAVER LAKE	5900	5/03	62	25.4	19.3
BIG COULEE	5100	4/27	0	0.0	0.0
BIG CREEK	6750	4/26	127	51.2	57.7
BIG SKY	7700	4/25	50	15.7	19.5
BIG SKY MEADOW	6350	4/25	18	6.3	1.6
BIG SNOWY	7150	5/01	76	29.4	30.5
BIG SPRINGS (ID)	6500	4/30	29	12.6	20.6
BLACK BEAR	7950	4/24	96	42.6	49.6
BLACK BEAR PILLOW	7590	4/24	SP	38.7	47.6
BLACK CANYON	7850	4/30	79	36.8	40.5
BLACK MOOSE (10)	8120	4/30	80	37.2	44.5
BLACK MOUNTAIN	7750	4/26	65	21.4	17.4
BLACK PINE	7100	4/30	41	14.6	12.5
BLACK PINE PILLOW	7100	4/30	SP	16.1	15.3
BLOODY DICK	7600	4/26	49	17.0	13.6
BLOODY DICK PILLOW	7600	4/26	SP	15.8	12.3
BLUE LAKE	5900	5/03	62	27.6	19.6
BOTS SOTS	8000	4/30	22	7.6	1.3
BOULDER MOUNTAIN	7950	4/24	72	24.6	27.2
BOULDER MOUNTAIN PILLOW	7950	4/24	SP	24.4	26.6
BOX CANYON	6670	4/30	28	10.4	6.2
BOX CANYON PILLOW	6670	4/30	SP	7.2	0.0
BOXELDER CREEK	5100	4/30	38	10.8	0.0
BRANHAM LAKES	8850	5/02	75	31.8	35.6
BRIDGER BOWL	7250	4/26	78	31.3	36.4
BRIDGER BOWL PILLOW	7250	4/26	SP	32.2	34.3
BRISTOW CREEK	3900	4/26	0	0.0	0.0
BRUSH CREEK TIMBER	5000	4/25	28	10.4	4.1
BULL MOUNTAIN	6600	4/30	26	10.2	0.0
BURGESS R.S. #2 (WY)	7900	4/28	24	7.3	9.4
CABIN CREEK	5200	4/27	19	6.2	3.0
CALL ROAD	8050	4/25	49	14.2	14.4
CALVERT CREEK	6450	4/25	31	11.6	11.5
CALVERT CREEK PILLOW	6450	4/25	SP	7.0	0.0
CAMP MISERY	6400	4/30	125	51.2	56.8
CAMP SENIA	7890	4/30	30	8.2	4.9
CARROT BASIN	9000	4/26	86	37.1	42.2
CEDAR GROVE	4100	4/25	27	11.2	5.4
CHESSMAN RESERVOIR	6200	5/01	22	7.5	0.0
CHICKEN CREEK	4060	4/27	18	6.9	2.6
CLOVER MEADOW	8600	4/25	55	18.7	20.6
COLE CREEK	7850	5/01	69	25.2	9.2
COLE CREEK PILLOW	7850	5/01	SP	22.6	11.8
COLLEY CREEK	6300	4/30	0	0.0	0.0
COMBINATION	5600	4/30	18	6.0	0.0
COMBINATION PILLOW	5600	4/30	SP	4.2	0.0
COOKE STATION	8150	4/30	60	23.2	27.9
COPPER BOTTOM	5200	4/27	27	11.3	1.6
COPPER BOTTOM PILLOW	5200	4/27	SP	15.8	8.1
COPPER CAMP	6950	4/27	84	34.2	32.1
COPPER CREEK	5700	4/27	41	16.8	7.9
COPPER LAKE CREEK	6100	4/27	70	29.4	24.9
COPPER MOUNTAIN	7700	4/30	45	14.4	11.3
COTTONWOOD CREEK	6400	4/25	42	13.4	7.0
COTYOTE HILL	4200	5/02	10	3.5	3.3
CRYSTAL LAKE	6100	5/01	39	12.9	11.1
DAO CREEK LAKE	8400	4/25	58	15.6	13.6
DAISY PEAK	7600	4/27	49	14.6	9.9
DAILY CREEK	5780	4/26	37	14.0	10.3
DANKHORSE LAKE	8600	4/27	78	28.6	32.2
DAVIS CREEK	5400	4/23	45	18.5	21.7
DEADMAN CREEK	6450	4/25	36	12.0	10.6
DEADMAN CREEK PILLOW	6450	4/25	SP	11.4	7.2
DESERT MOUNTAIN	5600	5/01	42	16.6	12.3
DEVILS SLIDE	8100	4/27	69	24.6	27.4
DISCOVERY BASIN	7050	4/26	40	13.4	7.7
DIVIDE	7800	4/25	36	10.9	13.1
DIVIDE PILLOW	7800	4/25	SP	11.7	14.5
OIX HILL	6400	4/29	24	9.5	0.0
EAST BOULDER S	9250	5/03	87	34.5A	36.5
EAST FORK R.S.	5400	4/27	0	0.0	0.0
ELK HORN SPRINGS	7800	4/27	37	13.3	10.6
ELK PEAK	8000	4/26	62	20.8	26.5
EMERY CREEK	4350	5/01	27	13.0	4.9
EMERY CREEK PILLOW	4350	5/01	SP	11.4	6.6
FATTY CREEK	5500	4/26	76	32.8	29.8
FISH CREEK	8000	4/27	50	14.0	8.2
FISHER CREEK	9100	4/30	96	40.8	47.0
FISHER CREEK PILLOW	9100	4/30	SP	37.9	43.7
FIVE SPRINGS FALLS (WY)	7500	4/30	12	2.9	8.9
FIVE-BULL	5700	5/03	16	4.6	1.4
FLATTOP MOUNTAIN PILLOW	6300	5/01	SP	43.7	42.2
FLEECER RIDGE	7500	4/30	43	14.6	9.4
FOOLHEN	8280	4/27	60	20.8	19.1
FOUR MILE	6900	4/27	32	11.2	2.4
FOURTH OF JULY	3450	4/30	13	4.2	5.2
FRED DURR PASS	8000	4/27	78	28.4	28.6
FREIGHT CREEK	6000	5/03	43	15.9	13.4
FRIDAY HILL	6420	4/30	24	10.5	12.0
FROHNER MEADOWS	6480	5/01	25	8.3	3.0
FROHNER MEADOWS PILLOW	6480	5/01	SP	11.3	6.4
GARVER CREEK	4250	4/23	12	4.4	6.4
GARVER CREEK PILLOW	4250	5/01	SP	2.1	3.4
GIBBONS PASS	7100	4/30	57	24.4	25.4
GOAT MOUNTAIN	7000	4/28	43	14.8	10.9
GOLD STONE	8100	4/26	62	21.4	20.7

SNOW	DRAINAGE BASIN (where SNOW COURSE NAME)	Elevation	THIS YEAR		PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Snow Depth (Inches)
						Average
SADDLE MOUNTAIN	7940	4/30	70	29.5	31.0	30.0
SADDLE MOUNTAIN PILLOW	7940	4/30	SP	24.8	30.0	30.7
SAWTELL MOUNTAIN (10)	8710	4/27	78	35.4	46.2	27.1
SHOWER FALLS	8100	4/27	73	27.7	30.7	32.2
SHOWER FALLS PILLOW	8100	4/27	SP	28.1	30.4	31.9
SILVER RUN	6630	5/01	0	.0	.0	4.9
SILVER RUN PILLOW	6630	5/01	SP	.0	.0	
SKALKAHO SUMMIT	7260	4/27	71	27.2	28.8	29.3
SKALKAHO SUMMIT PILLOW	7260	4/27	SP	27.1	27.6	
SLAG-A-MELT LAKE	8750	4/27	75	26.5	31.0	30.2
SLIDE ROCK MOUNTAIN	7100	4/27	56	20.1	17.6	20.9
SMUGGLER MINE	6960	5/02	32	11.0	10.0	10.8
SOUTH FORK SHIELDS	8100	4/27	83	35.6	32.3	30.2
SPOTTED BEAR MOUNTAIN	7000	5/03	35	12.4	6.5	11.7
SPUR PARK	8000	4/25	70	27.0	29.2	26.0
SPUR PARK PILLOW	8100	4/25	SP	26.0	28.2	25.6
STAIL PEAK	6050	4/27	93	36.9	49.4	46.0
STAR LAKE L.	9650	5/03	111	46.5A	50.0	51.1
STEAMBOAT POINT (WY)	7500	4/28	27	8.2	7.9	12.9
STEMPLE PASS	6600	5/01	50	15.9	12.5	12.0
STORM LAKE	7780	4/30	47	16.0	14.7	17.5
STHYKER BASIN	6180	4/27	80	31.9	34.8	-
STUART MILL	6500	5/01	13	4.3	.0	5.9
STUART MOUNTAIN	7400	4/30	80	33.4	37.2	36.1
SUCKLER CREEK	3960	4/27	0	.0	.0	.3
SUGARLOAF	7350	4/25	45	16.4	4.0	10.0
SYLVAN PASS (WY)	7100	5/02	14	5.4	11.0	11.0
TARGHEE PASS (10)	7000	5/01	32	12.7	17.0	16.2
TAYLOR PEAKS	8500	4/24	57	20.3	-	-
TAYLOR PEAKS PILLOW	8500	4/24	SP	17.4	-	20.2
TAYLOR ROAD	4080	4/27	0	.0	.0	1.3
TEN MILE LOWER	6600	4/30	28	9.7	1.5	7.1
TEN MILE MIDDLE	6800	4/30	46	15.8	13.2	14.1
TEN MILE UPPER	8000	4/30	53	18.9	16.8	17.1
TEPEL CREEK	8000	4/30	48	17.0	22.6	18.6
TEPEE CREEK PILLOW	8000	4/30	SP	14.7	19.1	14.9
TIMBERLINE CREEK	8850	4/30	46	13.9	11.8	21.3
TRAIL CREEK	7090	4/26	43	12.0	7.0	7.6
TRINKUS LAKE	6100	5/03	94	43.6	45.1	47.6
TV MOUNTAIN	6800	4/30	58	22.6	20.3	21.7
TWELVEMILE CREEK	5600	5/01	32	15.5	12.5	17.4
TWELVEMILE CREEK PILLOW	5600	5/01	SP	6.2	6.0	15.6
TWENTY-ONE MILE	7150	4/28	38	16.8	15.7	18.6
TWIN CREEKS	3500	5/03	7	2.5	.0	2.7
TWIN LAKES	6510	5/01	95	43.8	48.2	44.3
TWIN LAKES PILLOW	6400	5/01	SP	39.5	45.1	44.0
UPPER HOLLAND LAKE	6200	5/03	85	38.9	35.9	39.5
VALLEY VIEW (10)	6500	5/01	29	13.0	11.6	14.5
WALDRON	5600	4/30	20	7.6	5.6	6.1
WALDRON PILLOW	5600	4/30	SP	8.2	5.7	7.8
WARM SPRINGS	8250	4/27	62	21.8	23.0	-
WARM SPRINGS PILLOW	8250	4/27	SP	24.9	30.2	-
WEASLE OUIVIE	5450	4/27	69	28.7	35.8	36.9
WEST YELLOWSTONE	6700	4/28	23	10.1	8.2	9.1
WEST YELLOWSTONE PILLOW	6700	4/30	SP	5.0	4.4	6.18
WHISKY CREEK	6800	4/24	48	22.1	25.3	19.8
WHISKY CREEK PILLOW	6800	4/24	SP	18.9	17.8	16.7
WHITE ELEPHANT (10)	7700	4/30	50	22.8	33.2	25.2
WHITE MILL	8700	4/30	77	30.8	37.1	31.9
WHITE MILL PILLOW	8700	4/30	SP	28.5	33.8	28.1
WHITE PINE RIDGE	8850	4/25	29	6.8	2.3	7.0
WILLOW CREEK	6500	5/01	23	7.8	4.0	4.9
WOLVERINE (WY)	7650	4/29	38	14.8	16.4	12.3
WRONG CREEK	5700	4/25	42	17.4	10.6	11.4
WRONG RIDGE	6800	4/25	64	22.9	22.3	21.8

SNOW	DRAINAGE BASIN (where SNOW COURSE NAME)	Elevation	THIS YEAR		PAST RECORD	
			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Snow Depth (Inches)
						Average
LATE ARRIVING DATA						
Iceberg Lake #3	5600	5/02	63	29.9	22.3	35.1
Josephine Lower #9	4900	5/01	41	14.5	11.6	19.1
Mount Allen #7	5700	5/01	92	39.6	38.4	49.6
Pegon Pass #6	5500	5/01	76	34.4	31.9	43.0
Pennigan #8	5800	5/02	77	33.2	38.7	42.2

Average based on 1963-77 period. A - Aerial observation; water content estimated. SP - Snow Pillow observation; water content only. * Estimated from SNOTEL.



Snowmelt from mountain watersheds is beginning to appear in streams. This water, as it makes its way to the ocean, will be used by many people for drinking water, pollution abatement, power generation, recreation and irrigation.



RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH					
Basin of Storage	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average
COLUMBIA					
Kootenai	Kootenai	5,694.0	2,368.0	1,865.0	-
Flathead	Hungry Horse	3,428.0	2,285.0	1,947.0	2,006.0
	Flathead Lake	1,791.0	738.5	835.3	977.9
	Camas (4)	45.2	27.0	15.1	32.5
	Mission Valley (8)	100.3	68.7	70.6	44.0
Clark Fork	Georgetown Lake	31.0	26.0	24.6	23.1
	Lower Willow Creek	4.9	2.0	3.9	2.4
	Nevada Creek	12.6	-	7.5	-
	Noxon Rapids	334.6	278.1	234.3	138.4
Bitterroot	Painted Rocks	31.7	14.5	32.2	25.9
	Como	34.9	-	21.6	19.0
MISSOURI					
Beaverhead	Lima	84.0	51.0	74.9	51.5
	Clark Canyon	328.9	180.3	183.8	148.9
Ruby	Ruby	38.8	33.0	36.5	35.0
Madison	Hebgen Lake	337.5	183.3	168.8	212.6
	Ennis Lake	41.0	37.2	37.2	36.6
Gallatin	Middle Creek	8.0	3.7	4.5	4.5
Missouri	Canyon Ferry	2,043.0	1,473.0	1,514.0	1,552.0
	Hauser & Helena	61.9	25.5	63.0	59.3
	Lake Helena	10.4	7.5	10.9	9.6
	Holter Lake	81.9	79.5	79.6	70.6
	Fort Peck Lake	18,910.0	18,170.0	16,390.0	13,470.0
Smith	Smith River	10.6	10.5	11.6	8.9
	Newlan Creek	12.4	9.3	7.3	-
Musselshell	Bair	7.0	6.7	7.1	6.3
	Martinsdale	23.1	11.8	15.8	10.4
	Deadman's Basin	72.2	60.0	-	53.0
Sun	Gibson	99.0	60.6	48.4	48.8
	Willow Creek	32.2	28.2	19.4	23.4
	Pishkun	32.0	25.7	31.1	23.1
Marias	Lower Two Medicine	11.9	-	12.5	-
	Four Horns	19.2	-	13.1	-
	Swift	30.0	21.9	11.7	20.6
	Lake Frances	111.9	98.7	42.5	84.6
Milk	Elwell (Tiber)	1,347.0	545.5	564.7	611.2
	Beaver Creek	3.5	2.2	2.8	-
	Fresno	127.2	129.5	129.8	106.5
	Nelson	66.8	46.7	22.7	46.8
HUOSON BAY					
St. Mary's	Lake Sherburne	66.2	20.8	41.9	20.7
YELLOWSTONE					
Stillwater	Mystic Lake	21.0	26.7	0	3.1
Clark's Fork	Cooney	27.4	18.0	17.5	16.7
Tongue	Tongue River	68.0	31.7	30.2	35.2
Bighorn	Bighorn Lake	1,356.0	924.8	801.8	783.9

Average based on 1958-72 period.

PERCENT OF THE MISSOURI RIVER DRAINAGE ABOVE CANYON FERRY THAT HAS SNOW COVER			
DATE	PERCENT SNOW COVER	DATE	PERCENT SNOW COVER
November 1, 1978	9	February 20, 1979	98
November 14, 1978	98	February 27, 1979	96
December 6, 1978	100	March 2, 1979	100
December 10, 1978	100	March 8, 1979	95
December 19, 1978	100	March 11, 1979	85
January 1, 1979	100	March 14, 1979	76
January 8, 1979	100	March 20, 1979	82
January 14, 1979	100	March 24, 1979	76
January 23, 1979	100	April 5, 1979	64
January 29, 1979	100	April 8, 1979	68
February 4, 1979	100	April 28, 1979	52

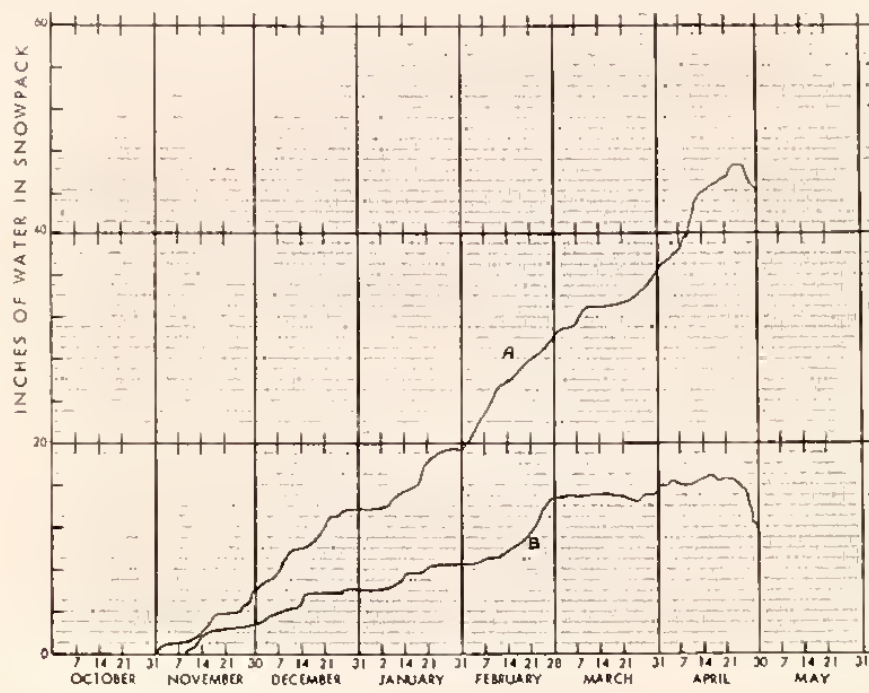


SNOW SURVEY DATA

SNOW PILLOW RECORDS

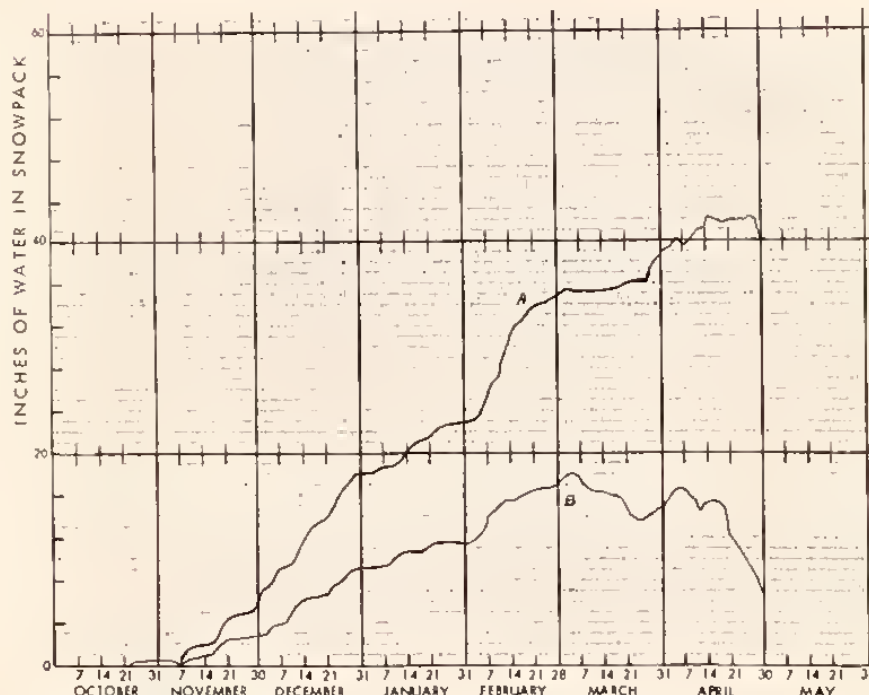
These snow pillow graphs show an increase in snow water equivalent at higher elevation sites during April. Lower elevation sites show both melt and accumulation during the month. In many drainages the peak snowmelt runoff does not occur until the snow is gone or nearly gone at lower elevations. Relationships can be developed between the amount of snow on the snow pillows and the dates of peak snowmelt. With a few years of record it is possible to determine whether or not the peak snowmelt runoff has occurred.

Before the peak snowmelt runoff occurs the date of peak can be estimated using present snow water equivalent and projected weather conditions. This date is primarily determined by temperature and snow-pack condition and not by rainfall. However, if it does rain during the snowmelt peak the amount of runoff entering the stream is increased. Contrary to common belief, rain does not hasten the melt of a mature, ripe mountain snowpack. It will only rain when temperatures are above freezing when the snowpack is also melting. Rain travels through a ripe, mature snowpack much as it would through a pile of sand. For example, if the snowpack melts one inch of water during a day and one inch of rain falls, approximately two inches of moisture will leave the snowpack and contribute to the runoff.



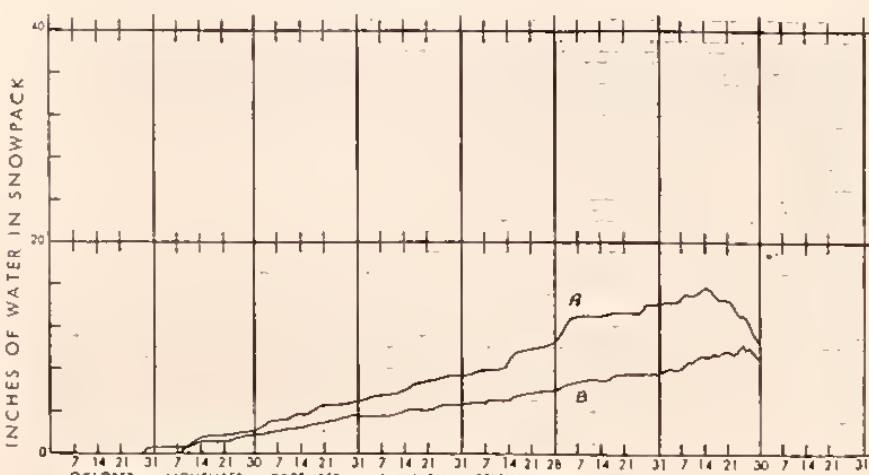
SWAN & FLATHEAD RANGES

- A Noisy Basin, elevation 6,150 ft.
- B Emery Creek, elevation 4,350 ft.



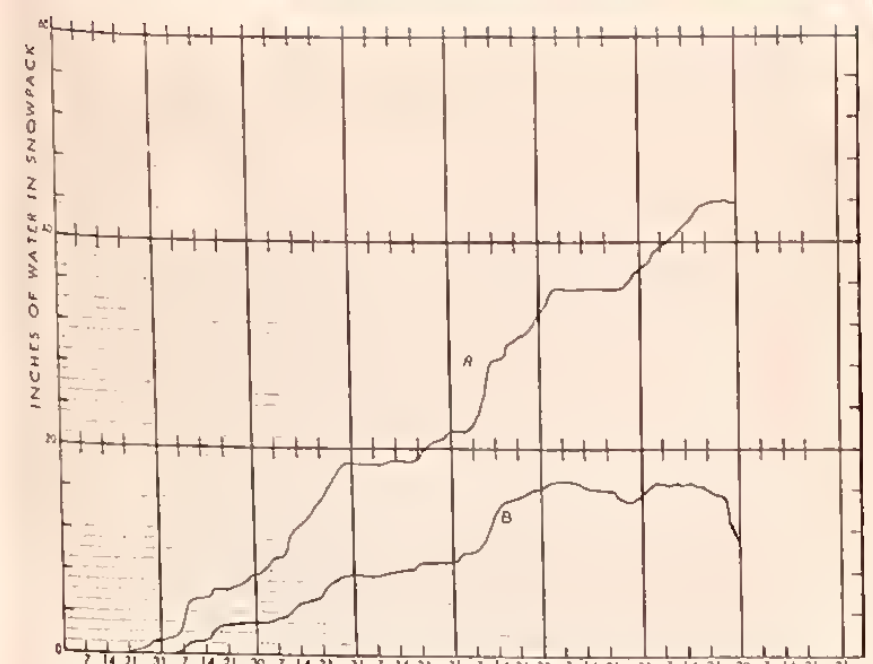
BITTERROOT MOUNTAINS

- A Twin Lakes, elevation 6,400 ft.
- B Twelvemile Creek, elevation 5,600 ft.



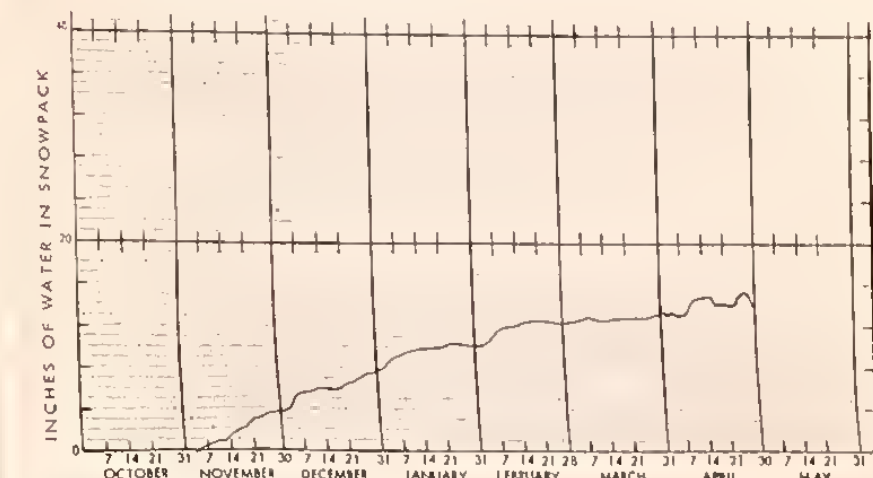
CENTENNIAL & BEAVERHEAD MOUNTAINS

- A Lakeview Ridge, elevation 7,400 ft.
- B Beagle Springs, elevation 8,850 ft.



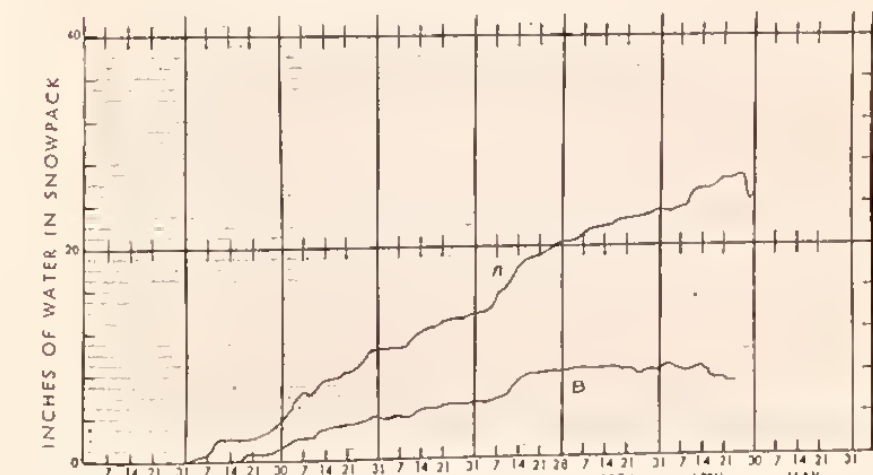
GLACIER PARK

- A Flattop Mountain, elevation 6,300 ft.
- B Many Glacier, elevation 4,900 ft.



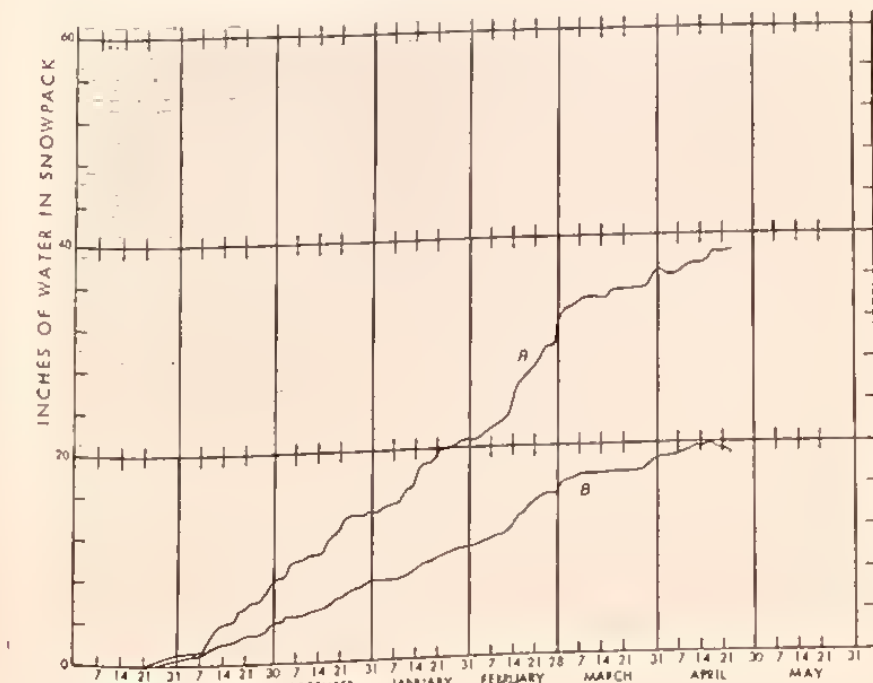
BIG SNOWY MOUNTAINS

- Crystal Lake, elevation 6,050 ft.



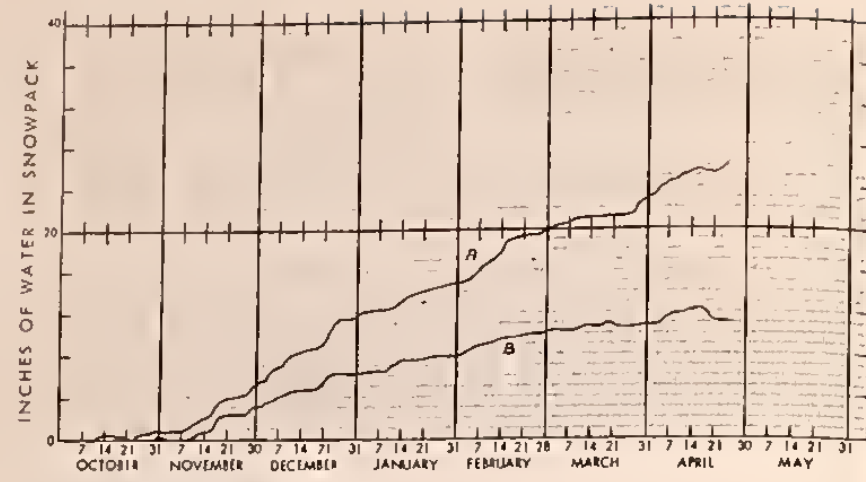
BITTERROOT MOUNTAINS-ANACONDA RANGE

- A Saddle Mountain, elevation 7,900 ft.
- B Calvert Creek, elevation 6,430 ft.



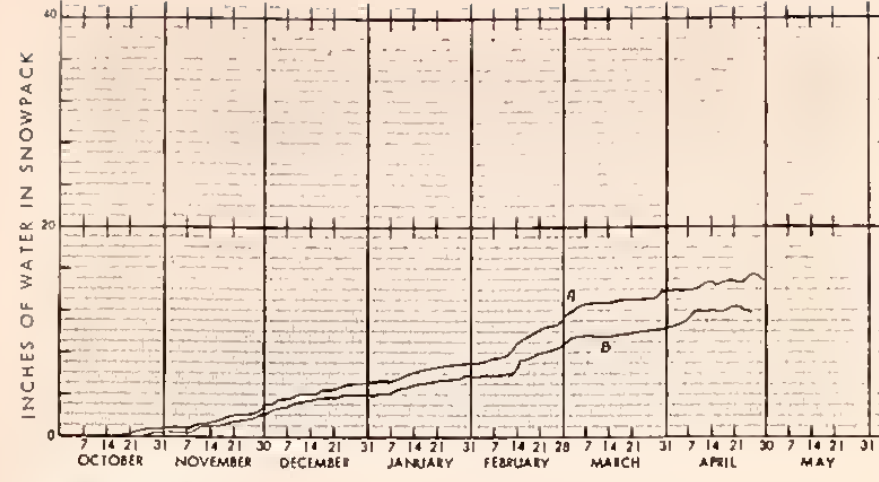
MADISON PLATEAU

- A Black Bear, elevation 7,950 ft.
- B Whiskey Creek, elevation 6,800 ft.



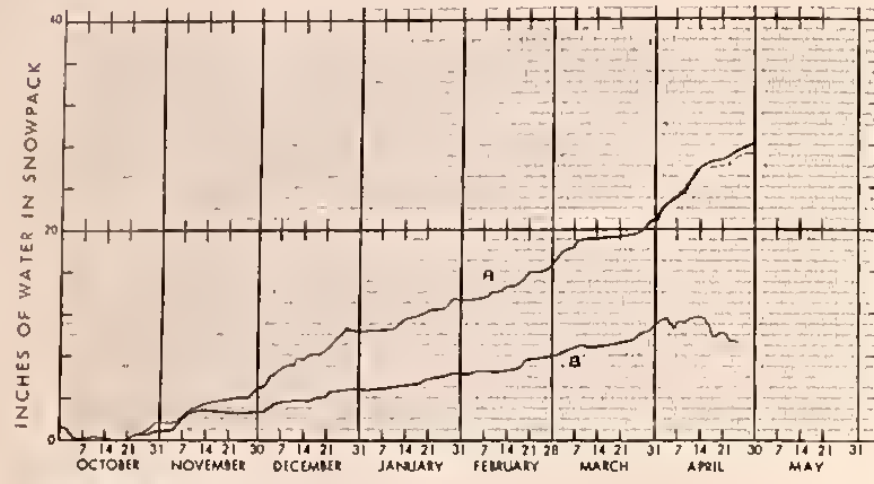
LITTLE BELT MOUNTAINS

A Spur Park, elevation 8,100 ft.
B Deadman Creek, elevation 6,450 ft.



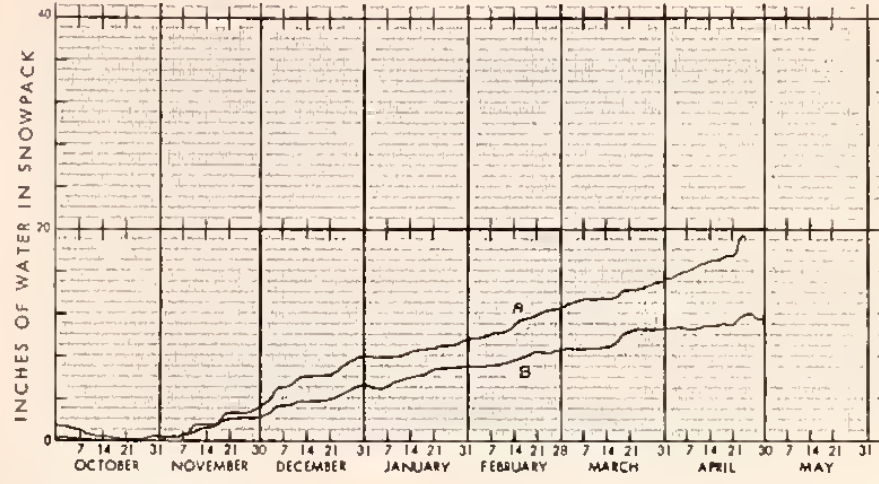
GRAVELLY RANGE

A Tepee Creek, elevation 8,000 ft.
B Divide, elevation 7,800 ft.



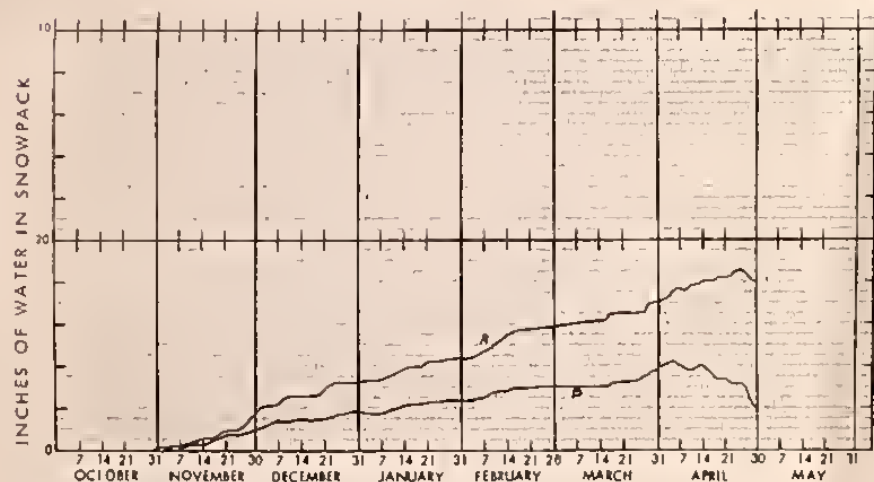
GALLATIN RANGE

A Shower Falls, elevation 8,100 ft.
B Lick Creek, elevation 6,860 ft.



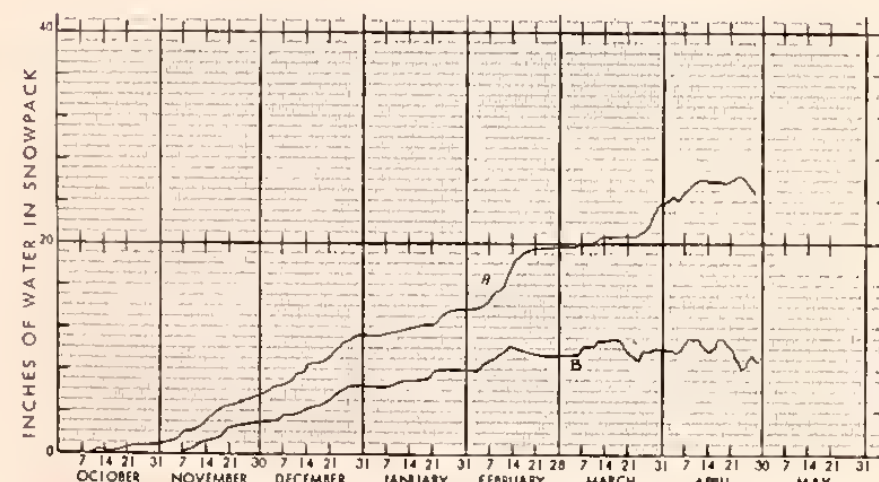
CONTINENTAL DIVIDE

A Rocker Peak, elevation 8,000 ft.
B Frohner Meadow, elevation 6,480 ft.



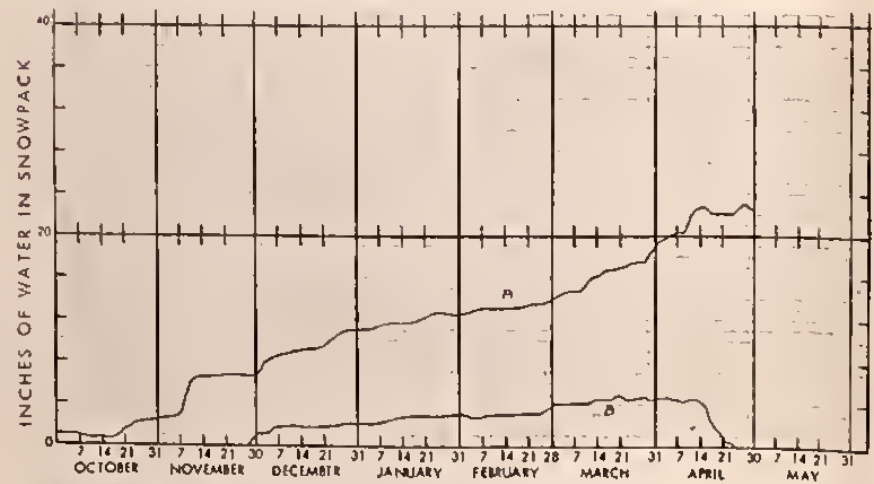
JOHN LONG MOUNTAINS

A Black Pine, elevation 7,100 ft.
B Combination, elevation 5,600 ft.



LEWIS MOUNTAINS

A Mount Lockhart, elevation 6,400 ft.
B Waldron, elevation 5,600 ft.



BEARTOOTH MOUNTAINS

A Cole Creek, elevation 7,850 ft.
B Silver Run, elevation 6,630 ft.



BEARTOOTH MOUNTAINS

A Fisher Creek, elevation 9,100 ft.
B Northeast Entrance, elevation 7,350 ft.

Missouri River & Hudson Bay Drainages

BASIN, STREAM, and/or FORECAST POINT	THIS YEAR		PAST RECORD		FORECAST		PAST RECORD	
	THOUSANDS OF ACRES	PERCENT OF AVERAGE	THOUSANDS OF ACRES	PERCENT OF AVERAGE	THOUSANDS OF ACRES	PERCENT OF AVERAGE	THOUSANDS OF ACRES	PERCENT OF AVERAGE
	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD	PERIOD
Based on 1963-1977 Average	May - September		May - September		May - July		May - July	
BEAVERHEAD RIVER near Grant (1)	93.0	70	89.3	133	78.0	70	68.7	110
BEAVERHEAD RIVER at Barratts (1)	135	75	180	110	110	73	150	150
RUBY RIVER near Alder	80.0	83	96	65.0	82	82	80	80
BIG HOLE RIVER near Melrose	570	80	710	520	80	648	648	648
BOULDER RIVER near Boulder	99.0	106	103	93.3	108	92.0	87.1	87.1
WILLOW CREEK near Harrison	14.5	76	19.0	13.0	78	16.6	16.6	16.6
MADISON RIVER near Grayling (2)	440	94	411	466	332	94	317	353
MADISON RIVER near McAllister (3)	732	93	759	783	557	93	591	598
HYALITE CREEK near Bozeman (5)	472	87	542	405	88	458	458	458
GALLATIN RIVER near Gateway	24.1	84	28.7	20.7	84	24.6	24.6	24.6
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (4)	38.0	85	44.9	32.6	85	38.5	38.5	38.5
GALLATIN RIVER at Logan	470	81	580	395	81	487	487	487
MISSOURI RIVER at Toston (6) (NWS)	1,880	81	2,410	2,314	1,822	82	1,966	1,972
SHEEP CREEK near White Sulphur Springs	21.0	99	30.8	21.3	18.0	98	25.9	18.3
SUN RIVER at Gibson Dam (7)	530	97	613	546	480	97	548	497
BELT CREEK near Monarch	142	104	137	132	106	125	125	125
MISSOURI RIVER at Fort Benton (8) (NWS)	2,960	82	3,613	2,550	82	3,104	3,104	3,104
TWO MEDICINE CREEK near Browning (9)	225	96	235	213	96	221	221	221
BADGER CREEK near Browning	113	91	124	97.0	91	107	107	107
MARIAS RIVER near Shelby (NWS)	507	98	462	518	470	99	392	474
MISSOURI RIVER at Virgelle (10) (NWS)	3,535	84	4,189	3,100	85	3,634	3,634	3,634
SOUTH FORK JUDITH RIVER near Utica	12.7	93	13.7	11.7	94	12.4	12.4	12.4
MISSOURI RIVER near Landusky (10) (NWS)	3,950	87	4,553	3,400	87	3,925	3,925	3,925
NORTH FORK MUSSELSHELL RIVER near Oelpine	5.0	94	5.3	4.2	95	4.4	4.4	4.4
SOUTH FORK MUSSELSHELL RIVER above Martinsdale	49.5	90	55.2	47.0	92	51.3	51.3	51.3
MISSOURI RIVER below Fort Peck Dam (11) (NWS)	3,800	89	4,253	3,300	89	3,705	3,705	3,705
MILK RIVER at Eastern Crossing (NWS)	224	102	220	3,550	88	4,034	4,034	4,034
MISSOURI RIVER near Wolf Point (12)	4,100	88	4,674	9,100	88	10,322	10,322	10,322
MISSOURI RIVER near Williston, North Dakota (13)	10,400	87	11,980	350	86	407	407	407
SASKATCHEWAN RIVER BASIN								
ST. MARY'S RIVER near Babb (14)	410	86	478	350	86	407	407	407



MISSOURI RIVER & HUDSON BAY DRAINAGES
MOUNTAIN SNOW WATER EQUIVALENT

FORECAST POINT	PEAK FLOW (SECOND FEET)	
	Forecast Range	Average
COLUMBIA RIVER DRAINAGE		
Average based on 1963-77 period		
Blackfoot River near Bonner	7,500 - 9,500	10,094
Clark Fork River above Missoula	15,000 - 18,000	17,285
Bitterroot River near Darby	5,500 - 7,000	6,707
Clark Fork River below Missoula	25,000 - 33,000	33,254
Clark Fork River at St. Regis	33,000 - 45,000	41,607
N. Fk. Flathead near Columbia Falls	14,000 - 17,000	22,987
M. Fk. Flathead near West Glacier	18,000 - 24,000	26,992
MISSOURI RIVER DRAINAGE		
Big Hole River near Melrose	6,500 - 7,500	8,577
Gallatin River near Gateway	5,000 - 6,000	5,845
Gallatin River near Logan	4,500 - 6,000	6,022
Missouri River at Toston	16,000 - 19,000	19,997
Belt Creek near Monarch	1,600 - 2,200	2,033
Marias River near Shelby	5,500 - 7,000	15,745
S. Fk. Musselshell above Martinsdale	700 - 950	1,002
YELLOWSTONE RIVER DRAINAGE		
Yellowstone River at Livingston	20,000 - 23,000	22,193
Boulder River near Big Timber	4,700 - 5,600	5,613
Stillwater River near Absarokee	5,500 - 7,000	7,087
Clarks Fork River near Belfry	6,500 - 7,500	7,737
Rock Creek near Red Lodge	1,100 - 1,300	1,175
Yellowstone River at Billings	41,000 - 50,000	45,793

STREAMFLOW FORECASTS

Runoff from the Missouri River headwaters is expected to be about 20 percent below average. Below average runoff is forecast for most tributaries except the Boulder River. Most downstream tributaries should produce near average runoff. The St. Mary's River which has most of its drainage in Glacier National Park, is forecast to have below average runoff. Well above average snow melt runoff is expected from small streams draining from the Bear Paw Mountains south of Havre.

In the Missouri headwaters area irrigation water supplies on streams not having stored water is expected to be more than adequate early in the season, dropping to below average later in the season. Most other drainages in the north should have near average late season irrigation supplies.

SUMMARY OF SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)			
RIVER BASIN and/or SUBWATERSHED	Number of Gauging Stations	THIS YEAR'S SNOW WATER AS PERCENT OF	PERCENT OF AVERAGE
Beaverhead.....	17	100	102
Ruby.....	8	91	91
Big Hole.....	20	109	103
Boulder.....	9	168	117
Jefferson.....	54	107	102
Madison.....	19	93	94
Gallatin.....	16	92	88
Missouri Headwater	89	101	97
West-side Missouri (Toston-Cascade)	7	145	118
Smith & Belt.....	6	95	105
Missouri Main-stem	13	113	111
Teton & Sun.....	8	125	121
Marias.....	4	129	100
Marias-Teton-Sun.	12	127	110
Judith.....	6	105	103
Musselshell.....	5	111	116
Judith-Musselshell	11	108	108
Milk.....	10	256	148
Bear Paws.....	6	325	213
Missouri (Total).....	135	105	100
Saskatchewan			
St. Mary's.....	7	121	82

MOUNTAIN SNOWPACK

The snowpack pattern is similar to conditions that have existed most of the winter. The low elevation snowpack remains above average, primarily due to lack of melt during April and a heavier than usual snowpack that accumulated during the winter. The lack of melt and snowfall has helped some high elevation areas show an increase in the amount of water stored in the snowpack.

The snowpack is generally below average in portions of the Gallatin, Madison, Ruby and Beaverhead River headwaters. It is above average along the Continental Divide from Butte north to the Teton River drainage; and well above average in the Bear Paw Mountains. Generally, high elevation snowpack is near average and lower elevations are above average.

There is enough low elevation snow in some areas to create bank-full streamflow during the main melt period. Significant rainfall during this period could create more runoff than can be handled by stream channels.

WATER SUPPLY OUTLOOK

STREAM or AREA	Spring Season	Summer Season
Beaverhead.....	Avg	Fair
Ruby.....	Avg	Fair
Big Hole.....	Avg	Fair
Boulder.....	Ex	Avg
Jefferson.....	Avg	Fair
Madison.....	Avg	Avg
Gallatin.....	Avg	Fair
West-Side Missouri	Ex	Avg
Smith-Belt.....	Avg	Avg
Sun.....	Avg	Avg
Teton.....	Avg	Avg
Marias.....	Avg	Avg
Judith.....	Avg	Avg
Musselshell.....	Avg	Avg
Milk.....	Ex	Avg
Bear Paws.....	Ex	Avg
St. Mary's.....	Avg	Fair

PEAK FLOWS

The range of estimates for peak flows are determined by using normal weather patterns expected to occur during the main snowmelt period. Lower values represent peak flows expected primarily from snowmelt with little rain. Higher values represent peak flows expected from moderate rainfall occurring during the main snowmelt period. Abnormally warm temperatures or heavy rainfall could result in peak flows being higher than predicted.

Columbia - Peak flows on most tributaries are forecast to be slightly below average on most unregulated streams. The Clark Fork River should have near average flows.

Missouri - Unregulated streams should have peak flows in the below-to-near average range.

Yellowstone - Peak runoff is expected to be near average on most streams.

Yellowstone River Drainage

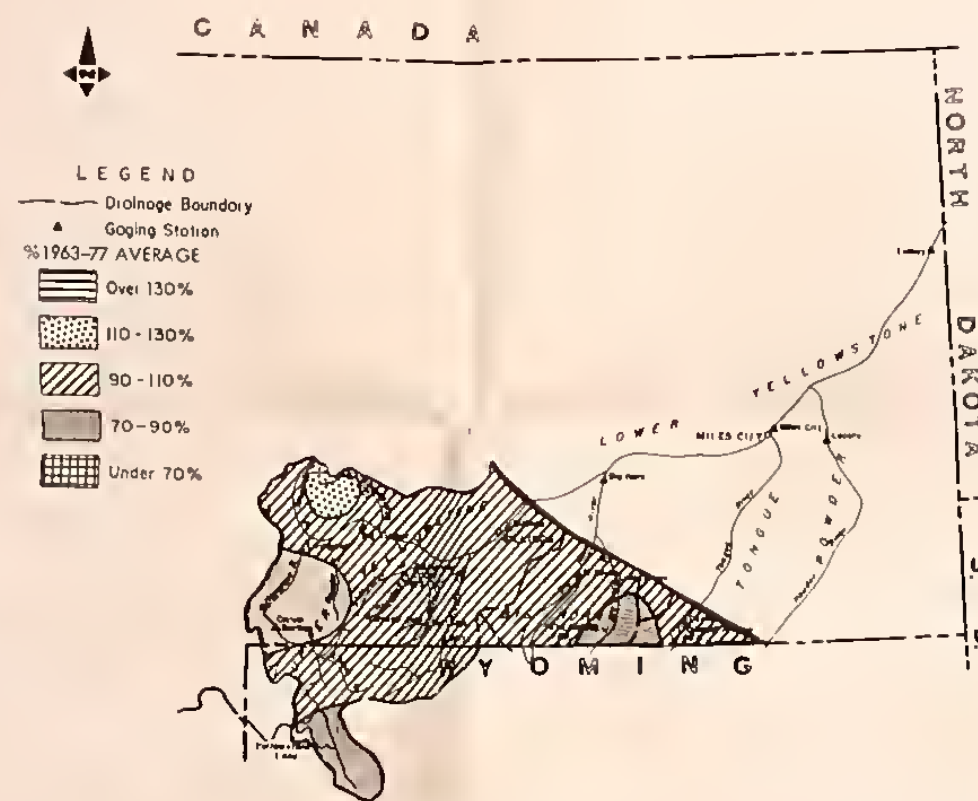
BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD		THIS YEAR		PAST RECORD	
	FORECAST	THOUSAND ACRES	FORECAST	THOUSAND ACRES	FORECAST	THOUSAND ACRES	FORECAST	THOUSAND ACRES
Based on 1963-1977 Average Period	PERIOD	May - September	PERIOD	May - July	PERIOD	May - September	PERIOD	May - July

YELLOWSTONE RIVER at Corwin Springs	1,955	97	2,069	2,021	1,630	97	1,667	1,668
YELLOWSTONE RIVER near Livingston	2,260	96	2,363	2,363	1,860	96	1,941	1,941
BOULDER RIVER at Big Timber	362	90	404	404	340	92	370	370
STILLWATER RIVER near Absarokee (1)	570	90	634	634	487	92	528	528
CLARK'S FORK RIVER near Beltry	555	89	623	623	500	92	543	543
CLARK'S FORK RIVER near Silesia	580	89	649	649	500	92	544	544
ROCK CREEK near Red Lodge	115	99	107	116	84.0	94	80.2	89.0
IMFLOW COONEY RESERVOIR near Boyd (2)	55.0	98	56.0	56.0	45.0	102	44.0	44.0
YELLOWSTONE RIVER at Billings (HWS)	4,150	94	5,226	4,428	3,500	94	4,331	3,725
BIGHORN RIVER near St. Xavier (3) (HWS)	1,676	89	2,554	1,887	1,550	90	2,265	1,714
LITTLE BIGHORN RIVER near Hardin	133	79	168	168	115	78	147	147
YELLOWSTONE RIVER at Miles City (4) (HWS)	5,880	89	6,636	6,636	5,200	90	5,737	5,737
YELLOWSTONE RIVER near Sidney (5) (HWS)	6,300	87	7,214	7,214	5,450	88	6,212	6,212

- (1) Adjusted for storage in Mystic Lake.
 (2) Adjusted for storage in Cooney Reservoir.
 (3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake, Pilot Butte and Bighorn Reservoirs.
 (4) Adjusted for storage in Bull Lake, Buffalo Bill, Boysen, Pilot Butte, Bighorn and Tongue River Reservoirs.
 (5) Adjusted for reservoirs shown in (4) and diversions into the Lower Yellowstone Canal.
 (HWS) National Weather Service forecast.

MOUNTAIN SNOWPACK

Portions of the Upper Yellowstone River headwaters have below average amounts of water stored in the snowpack. The Bighorn Mountains also report average snowpack. There is above average snowpack in the Crazy Mountains with most other areas showing near average conditions for May 1. Because of cool April temperatures, many areas still have above average low elevation snow that has not melted.



YELLOWSTONE RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

STREAMFLOW FORECASTS

The total runoff in the Yellowstone River system above the Bighorn River will be near average to a little below average for the May through September period. Runoff during April was below average in the upper tributaries and above average in the lower drainages. Irrigation water supplies should be adequate in the early season and average to below average in late season.

WATER SUPPLY OUTLOOK

STREAM or AREA	Flow Period	
	Spring Season	Late Season
Yellowstone at Livingston	Avg	Avg
Shields	Avg	Avg
Boulder	Avg	Avg
Sweetgrass - Big Timber	Avg	Avg
Stillwater	Avg	Avg
Rock Creek	Avg	Avg
Clark's Fork	Avg	Avg
Yellowstone above Bighorn	Avg	Avg
Bighorn	Avg	Avg
Little Bighorn	Avg	Fair
Tongue	Avg	Avg
Powder	Avg	Avg
Lower Yellowstone	Avg	Avg

U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS
Collaborating with
MONTANA AGRICULTURAL EXPERIMENT STATION

MAY 15, 1979



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STREAMFLOW FORECASTS

There has been no significant change in the overall water supply outlook as reported on May 1. Cool temperatures have retarded snowmelt for most of May.

Streamflows have begun increasing recently as warmer temperatures generate additional snowmelt. Most major rivers are just starting to rise, and have not yet reached their snowmelt peaks. The amount of melt as shown by snow pillow records provides some indication of when the snowmelt runoff will occur. Based on this year's data, most streams west of the divide will reach their peak snowmelt runoff near the end of May or in early June. Lower elevation streams will peak soon after mid-May.

Unless temperatures are well above normal during the next two weeks, most streams in the Missouri River headwaters should reach their snowmelt peaks between early and mid-June. Snowmelt streams in central Montana will reach their peak in late May or early June.

Based on present snow conditions, streams in the Yellowstone River system will have their largest snowmelt runoff near mid-June.

FEDERAL-STATE-PRIVATE COOPERATIVE SNOW SURVEYS

Participate in snow data
collection for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydroelectric power
generation, navigation,
mining and industry.

"The Conservation of Water Begins
with the Snow Survey"

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SOIL CONSERVATION SERVICE
P.O. Box 98
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Most mountain drainages still have substantial snowcover in the higher elevations and in protected areas of the watershed. The more exposed south facing slopes are starting to "bare off".

PERCENT OF THE MISSOURI RIVER DRAINAGE ABOVE CANYON FERRY THAT HAS SNOW COVER

DATE	PERCENT SNOW COVER	DATE	PERCENT SNOW COVER
November 1, 1978	9	February 20, 1979	98
November 14, 1978	98	February 27, 1979	96
December 6, 1978	100	March 2, 1979	100
December 10, 1978	100	March 8, 1979	95
December 19, 1978	100	March 11, 1979	85
January 1, 1979	100	March 14, 1979	76
January 8, 1979	100	March 20, 1979	82
January 14, 1979	100	March 24, 1979	76
January 23, 1979	100	April 5, 1979	64
January 29, 1979	100	April 8, 1979	68
February 4, 1979	100	April 28, 1979	52
		May 3, 1979	48

SATELLITE SNOW COVER



MISSOURI RIVER BASIN
Above
Canyon Ferry Dam

DATA PROVIDED BY NOAA/NESS

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES

- Canada
 Water Survey of Canada, Calgary, Department of the Environment
 Water Resources Service, Department of Lands, Forests and Water Resources,
 British Columbia
 Alberta Environment, Edmonton, Alberta
 Federal
 Department of the Army - Corps of Engineers
 Department of Agriculture - Forest Service
 - Soil Conservation Service
 Department of Commerce - NOAA
 - National Weather Service
 Department of Interior - Bonneville Power Administration
 - Bureau of Indian Affairs
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
 - National Park Service

STATE AGENCIES

- Montana Conservation Districts
 Montana Department of Fish and Game
 Montana Department of Natural Resources and Conservation
 Montana State University - Agricultural Experiment Station
 University of Montana - School of Forestry
 DNRC - State Forester

PRIVATE ORGANIZATIONS AND INDIVIDUALS

- Butte Water Company
 Montana Power Company
 The Anaconda Company
 Big Sky of Montana
 Jack & Scott Graveley
 Arthur Christensen
 Jack Fenton



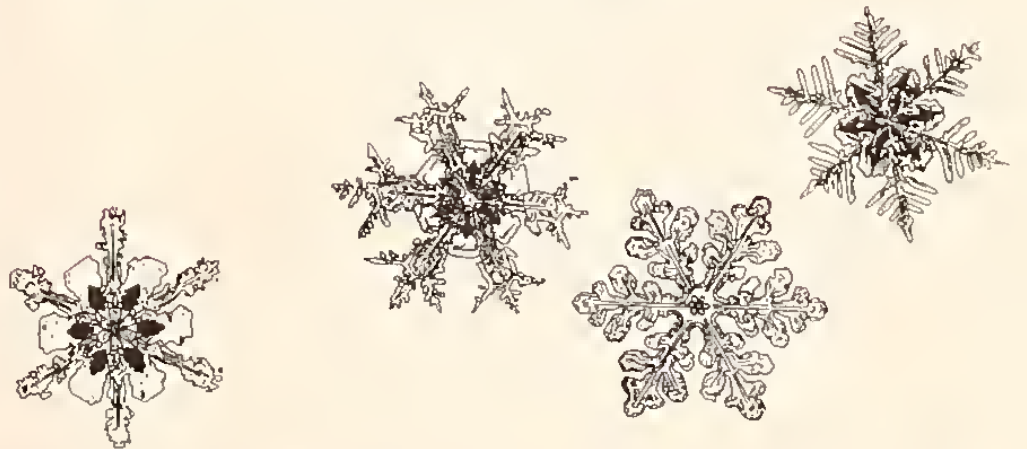
Snow surveys will be made again near the first of June at key high elevation sites.

SNOW SURVEY DATA

SNOW		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average
ARCH FALLS	7350	5/14	35	12.2	11.2	14.7
BAOGER PASS	6900	5/12	94	44.1	38.8	45.0
BALD EAGLE PEAK	5700	5/14	103	49.7	49.6	59.0
BAREE CREEK	5500	5/15	63	33.1	33.9	41.5
BAREE MIDWAY	4600	5/15	40	21.1	14.8	25.0
BAREE TRAIL	3800	5/15	0	.0	.0	.0
BASIN CREEK	7160	5/14	32	10.6	4.4	6.1
BATTLE RIDGE	6020	5/15	0	.0	.0	1.6
BEAGLE SPRINGS PILLOW	8850	5/15	SP	7.2	-	-
BLACK BEAR	7950	5/14	74	38.1	49.5	41.4
BLACK BEAR PILLOW	7590	5/14	SP	34.8	42.2	36.0
BLACK PINE	7100	5/14	31	11.4	10.4	11.6
BLACK PINE PILLOW	7100	5/14	SP	13.0	13.3	12.4
BLOODY DICK	7600	5/15	EST	11.5	-	-
BLOODY DICK PILLOW	7600	5/15	SP	11.0	8.5	-
BLUE LAKE	5900	5/12	57	27.4	17.6	21.3
BOTS SOTS	8000	5/15	11	3.6	4.8	10.4
BOULOER MOUNTAIN	7950	5/15	EST	20.5	-	-
BOULOER MOUNTAIN PILLOW	7950	5/15	SP	20.0	-	-
BOX CANYON PILLOW	6670	5/15	SP	1.9	-	-
BRIGGER BOUL	7250	5/15	67	30.8	32.0	31.1
BRIGGER BOWL PILLOW	7250	5/15	SP	29.0	31.9	29.2
CALVERT CREEK	6450	5/15	EST	10.5	-	-
CALVERT CREEK PILLOW	6450	5/15	SP	3.5	.0	.0
CAMP SENIA	7890	5/15	24	6.9	9.3	10.9
CEGAR GROVE	4100	5/14	0	.0	.0	1.0
COLE CREEK	7850	5/15	EST	25.0	15.8	22.4
COLE CREEK PILLOW	7850	5/15	SP	24.0	15.4	20.9
COMBINATION	5600	5/13	0	.0	.0	1.0
COMBINATION PILLOW	5600	5/13	SP	.0	.0	1.1
COOKE STATION	8150	5/16	51	23.1	28.3	20.9
COPPER BOTTOM	5200	5/15	EST	1.0	.0	-
COPPER BOTTOM PILLOW	5200	5/15	SP	5.5	.6	.5
COPPER CAMP	6950	5/15	EST	32.0	30.0	-
COPPER MOUNTAIN	7700	5/15	33	10.7	6.9	8.4
DAVIS CREEK	5400	5/14	14	6.2	11.8	14.4
DEADMAN CREEK	6450	5/15	EST	8.0	5.1	4.6
DEADMAN CREEK PILLOW	6450	5/15	SP	7.5	4.7	2.9
DEVILS SLUE	8100	5/14	64	25.8	27.4	28.7
DISCOVERY BASIN	7050	5/13	30	10.5	2.7	8.6
DIVIOE	7800	5/15	EST	5.5	9.5	-
DIVIOE PILLOW	7800	5/15	SP	6.5	9.4	7.6
EAST BOULOER S	9250	5/15	72	33.0	41.5	35.2
FISH CREEK	8000	5/14	38	13.1	9.1	10.2
FISHER CREEK	9100	5/16	90	41.4	49.2	45.6
FISHER CREEK PILLOW	9100	5/16	SP	36.9	43.6	43.1
FLATTOP MOUNTAIN PILLOW	6300	5/15	SP	46.4	45.1	-
FOURTH OF JULY	3450	5/14	0	.0	.0	-
FRIOAY HILL	4620	5/15	2	1.0	.6	-
FROHNER MEADOWS	6480	5/15	EST	3.8	-	5.4
FROHNER MEADOWS PILLOW	6460	5/15	SP	8.5	4.5	6.9
GARVER CREEK	4250	5/14	0	.0	.0	.4
GRAVE CREEK	4300	5/16	2	1.0	7.2	8.9
GUNSIGHT LAKE	6300	5/12	92	43.7	39.5	42.6
HAND CREEK PILLOW	5030	5/15	SP	4.3	-	-
HAWKINS LAKE	6450	5/14	50	22.0	29.0	33.0
HEART LAKE TRAIL	4800	5/15	27	13.5	2.8	10.2
HELL ROARING DIVIDE	5770	5/16	57	26.8	24.5	26.1
HOLBROOK	4530	5/12	0	.0	.0	.0
HOOD MEADOW	6600	5/14	18	6.2	2.4	9.6
HOODOO BASIN	6000	5/15	87	40.0	43.7	50.5
HOODOO BASIN PILLOW	6000	5/15	SP	33.6	-	50.4
HOODOO CREEK	5900	5/15	86	40.0	39.2	46.2
INTERGAARD	6450	5/15	13	4.6	-	7.7
KINGS HILL	7500	5/15	45	16.6	18.2	16.7
LEMHI RIDGE	8100	5/15	EST	7.5	11.5	-
LEMHI RIDGE PILLOW	8100	5/15	SP	11.5	14.1	8.1
LICK CREEK	6860	5/14	14	5.4	.0	7.0
LICK CREEK PILLOW	6860	5/14	SP	2.5	.2	6.3
LOLO PASS PILLOW	5230	5/15	SP	13.5	-	-
LOOKOUT (10)	5250	5/14	39	20.0	22.5	30.9
MAISON PLATEAU	7750	5/14	43	19.8	-	19.5
MAISON PLATEAU PILLOW	7750	5/14	SP	22.3	-	19.6
MAYNARD CREEK	6210	5/15	35	14.2	12.3	13.2
MAYNARD CREEK PILLOW	6210	5/15	SP	15.8	10.6	9.7
MOULTON RESERVOIR	6850	5/15	0	.0	-	-

SNOW		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (Inches)	
NAME	Elevation				Last Year	Average
MOUNT LOCKHART	6400	5/15	EST	20.5	-	22.2
MOUNT LOCKHART PILLOW	6400	5/15	SP	22.0	-	23.6
NEWTON MOUNTAIN	5600	5/15	52	23.5	27.8	-
NOISY BASIN	6040	5/15	112	54.5	58.6	49.7
NORTH FK. ELK CREEK	6250	5/16	20	8.4	.6	5.4
NORTH FK. ELK CREEK PILL	6250	5/16	SP	6.2	.4	5.5
NORTH FORK JOCKO	6330	5/15	90	42.1	44.5	43.9
NORTHEAST ENTRANCE	7400	5/14	11	4.0	6.8	5.0
NORTHEAST ENTRANCE PILL.	7400	5/14	SP	5.8	.0	4.2
PETERSON MEADOWS	7200	5/15	28	10.5	5.9	9.7
PETERSON MEADOWS PILLOW	7200	5/15	SP	9.3	8.3	10.3
PICKET PIN O	9450	5/15	57	25.5	35.0	32.8
PICKFOOT CREEK PILLOW	6650	5/15	SP	7.3	-	-
PIPESTONE PASS	7200	5/15	19	6.0	-	-
PLACER BASIN F	8800	5/15	51	23.0	28.5	25.6
POORMAN CREEK	5100	5/14	42	23.0	20.9	24.4
PORCUPINE PILLOW	6500	5/15	SP	4.5	.4	-
REO MOUNTAIN	6000	5/14	30	11.6	14.3	15.6
REO TOP	5260	5/15	33	14.1	21.4	-
ROCKER PEAK	8000	5/15	EST	15.0	22.0	16.6
ROCKER PEAK PILLOW	8000	5/15	SP	15.5	22.5	19.0
SADOLE MOUNTAIN	7940	5/15	EST	23.0	31.0	28.7
SAUDLE MOUNTAIN PILLOW	7940	5/15	SP	25.0	31.4	29.1
SHOWER FALLS	8100	5/14	68	27.2	32.7	32.5
SHOWER FALLS PILLOW	8100	5/14	SP	28.6	32.5	31.2
SILVER RUN	6630	5/15	EST	.0	.0	3.3
SILVER RUN PILLOW	6630	5/15	SP	.0	.0	-
SKALKAHU SUMMIT	7260	5/14	58	24.4	25.2	25.8
SKALKAHU SUMMIT PILLOW	7260	5/14	SP	25.1	27.8	-
SOUTH FORK SHIELDS	8100	5/10	80	32.6	-	-
SPOTTEO BEAR MOUNTAIN	7000	5/12	25	11.7	.0	6.3
SPUR PARK	8000	5/15	EST	25.5	30.4	24.3
SPUR PARK PILLOW	8100	5/15	SP	26.0	30.6	23.8
STAHL PEAK	6050	5/14	79	37.0	45.9	41.7
STAR LAKE E	9650	5/15	99	47.5	55.0	53.3
STUART MOUNTAIN	7400	5/15	73	33.1	35.1	29.2
TEPEE CREEK	8000	5/15	EST	12.0	-	16.7
TEPEE CREEK PILLOW	8000	5/15	SP	10.5	16.0	12.7
TIMBERLINE CREEK	8850	5/15	39	11.3	16.5	19.9
TRINKUS LAKE	6100	5/12	92	43.9	42.8	19.9
TV MOUNTAIN	6800	5/15	45	18.5	16.6	18.9
TWIN CREEKS	3580	5/12	0	.0	.0	.0
TWIN LAKES	6510	5/15	EST	41.0	45.5	40.3
TWIN LAKES PILLOW	6400	5/15	SP	35.0	41.0	39.9
UPPER HOLLAND LAKE	6200	5/12	79	36.2	30.2	33.8
WALDRON	5600	5/15	EST	2.5	-	1.0
WALORON PILLOW	5600	5/15	SP	2.0	-	3.8
WARM SPRINGS	8250	5/16	50	20.0	-	-
WARM SPRINGS PILLOW	8250	5/16	SP	24.6	31.0	-
WEASEL DIVIDE	5450	5/14	51	23.6	30.4	31.3
WEST YELLOWSTONE PILLOW	6700	5/14	SP	1.3	.0	1.8
WHISKEY CREEK	6800	5/14	28	13.0	14.4	10.8
WHISKEY CREEK PILLOW	6800	5/14	SP	14.2	10.2	10.4
WHITE MILL	8700	5/16	70	31.4	40.0	32.0
WHITE MILL PILLOW	8700	5/16	SP	25.5	34.0	26.3

Average based on 1963-77 period. A - Aerial observation; water content estimated. SP - Snow Pillow observation; water content only. *Estimated from SNOTEL.



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GOVERNMENT AGENCIES

Canada

Water Survey of Canada, Calgary, Department of the Environment
Water Resources Service, Department of Lands, Forests and Water Resources,
British Columbia
Alberta Environment, Edmonton, Alberta

Federal

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- Soil Conservation Service
Department of Commerce - NOAA
- National Weather Service
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